

opinion or adoption of others, who ought at once either to come to some decision on the multitude of inventions already thrust upon their notice, or to offer premiums for, or call upon engineers or others to invent, the requisite mechanism or apparatus, for immediate adoption. We shall therefore in the meantime only state, that Mr. Alfred Knight's scheme, so far as we can describe it without the aid of copies of the plans sent us, consists in the transfer of power from the axle of one carriage to motion, through a set of bevel-wheels, &c., worked by a vertical shaft in the hand of the guard, to a breaking apparatus applied to an adjoining carriage, such as a luggage-van, and communicating the power of the motion itself, according to its measure, to the peripheries of the van-wheels for the arresting of their motion. This idea of the self-acting break, if the mechanism in which it is embodied be effectual, seems to be one of those wearing the stamp of that higher order of ingenuity which renders the power of evil itself the agent of its own destruction, so that the greater the imminence of peril the greater the power to overcome it.

We have received the following letter, which bears on the subject:—

Sir,—In the *Newcastle Chronicle* of the 8th instant the following paragraph appears:—"Mr. George Stephenson's new break is a self-acting apparatus, connected with the buffers by means of a rod or bar, around which a spiral spring is wound. Both rod and spring are attached to a perpendicular lever or beam, affixed to the customary break. The effect is instantaneous. The stoppage of the locomotive, as it is known to every body, causes the buffer to press inwards the beam or lever connected thereto, pressing up the break, and clamping both wheels at one and the same time upon every carriage throughout the train simultaneously. The stoppage of the entire train is effected within a very much shorter space. The invention is the most simple and effective that can possibly be conceived; and Mr. Stephenson, with great liberality, has thrown it open for the benefit of the public." Upon the subject of this paragraph I think it due to myself to state, that having last year found out the same thing, I claim the merit of being the original inventor. I, at the time, mentioned to a friend the discovery I had made, and subsequently wrote about it to a distinguished member of her Majesty's Government, to whom I had afterwards the honour to show and explain it personally; which I did, in the hope he might be able to recommend it to the attention of one or other of the railway companies; but not having any influence in that quarter, he regretted that it was not in his power to assist me. I might have applied to them myself direct, but I felt it would be of no avail, being aware that ingenious individuals whom I have the pleasure to know (a poor man, struggling with adversity, though a legitimate descendant of an illustrious ancestor, Alfred the Great, whose noble qualities and patriotic spirit he inherits), had written to every one of the railway companies, offering to them certain of his inventions, but without effect, not one of them condescending even to give him an answer. Of course, I was deterred from following his example, as I could only expect, had I done so, to meet with similar treatment.

Such conduct on the part of the railway authorities, is, to say the least of it, most reprehensible. Instead of discouraging ingenious men in their benevolent attempts to abate the defects and dangers of railway travelling, they ought rather, to invite them to do so; urging, moreover, their zeal and their ingenuity into more active operation, by the stimulus of a magnificent reward. If they felt the tremendous responsibility they are under to the millions that intrust to them their lives and their property, they would adopt this course; and, most assuredly, it is that which humanity dictates.—I am, Sir, &c.,

EDMUND HEPPLE.

Blackheddon House, Northumberland.

ENAMELLING METALS.—Mr. Walton, of Wolverhampton, has obtained a patent for coating copper, iron, &c., with an enamel, which will stand a red heat, without any injury, even if the enamelled surfaces be profusely ornamented.

THE SANATORY STATE OF SHEFFIELD.

At a recent meeting of the town council of Sheffield, it was stated that copies of an elaborate report on the sanitary state of the town—or rather, on its insanitary state—had been sent to many persons, and, amongst them, to Lord Morpeth and Mr. Cobden, to the Improvement Commissioners, town trustees, &c., &c., and that as far as answers had been received, the committee had been thanked for sending them. We have ourselves to return thanks for our copy of this searching and valuable report, albeit even the mere perusal of details so patiently and personally investigated was by no means the most pleasant of tasks. In truth, the mass of evidence, as observed by the *Iris*, is at once 'frightful and most humiliating,' and such as even a local authority, like the *Iris*, was 'not prepared to encounter.'—town councillors themselves, indeed, being 'wonderstruck.' Though imperative on leading local authorities, however, to look dread evils such as these in the face, with searching penetration; still to us the necessity is not so paramount, and we shall therefore spare our readers and ourselves the harrowing process of detail, which nevertheless cannot fail to open the eyes of the more influential and able portion of the population of Sheffield, and not of it alone, to the enormity, not only of the evils which have hitherto existed, and which still exist, but to the intensified burrows which,—if effectual preventive and remedial measures be not instantly and earnestly adopted,—may be further and most assuredly anticipated on the speedy and inevitable advent of that virulent modern inoculation of little less than the active plague of filth, named cholera, which is now so steadily stalking westward from the foul and crowded poorer districts of the towns and cities of the east.

This sacred cause of cleanliness ought now to be perpetually agitated as a duty, as a household and a municipal virtue,—nay, as an observance of natural religion itself for the physical salvation of the human race. And not only as such, but as a matter of obvious self-interest to all, and to employers of human energies in particular, such as those in Sheffield, and, in fact, in every town and city in the empire; for no axiom can be clearer or more conclusive than this: that cleanliness and purified air give health and strength as these give mental elasticity and active habits, leading at once to economical and profitable labour. Fresh and vital air unpoisoned by the deadly and benumbing influence of town excretion is, as it were, a perpetual spur to the vigour of will and action, worth whole oceans of artificial spirits, without their exhausting influence. To the obtaining of such ends as these, and those of the improvement of the taste and morals of the working classes,—to all of which the enlightened authors and collaborators of the Sheffield Report, Messrs. Haywood and Lee, are fully alive,—the adoption of the following measures are recommended, namely:—"Better constructed dwellings, both as regards light and ventilation, and a liberal supply of water; the substitution of water-closets for the present open privies, and as many as possible of them in relation to the number of houses; also more spacious and commodious yards, well paved and drained, with public washing houses and baths in populous districts—and, above all, places for proper and rational recreation." The drainage and other improvements to property, they recommend should, in the first place, and at once, be undertaken by the corporation; and the sewerage and litterage of the town properly regulated so as to yield a free profit of at least 16,000*l.* to 18,000*l.* a year, for the carrying out of further improvements; while the lighting and supply of water, &c., should also be undertaken by the corporation. Owners of property, they suggest, should only be called on to repay improvements in drainage, &c. by small instalments over a long course of years, and tenants to pay a small per centage for cleansing, &c. amounting probably, on an average, to 1*s.* per annum on each house, a respectable artisan being thus only required to pay something like

* We may here remind our readers, that it has been actually proved that individuals born and bred on the dark sides of streets, or otherwise in the vicinity of filth, are liable to (many) evils and defects, and even to premature death. What a lot then on the health of towns in the West of England! The powerful and peculiar influence of light on animals (as we may add, has been proved) is in the highest degree important, and it is a fact that light will not give up its influence at all, so we must, but will never continue to give into the lower organisation of enormous tadpoles!

3*d.* and 4*ths* per week, for thorough cleansing, paving, and draining, and for a supply of water at 1*d.* per 1,000 gallons, or also per week, inclusive.

WESTMINSTER COURT OF SEWERS.

A GENERAL court was held on Friday, 15th; Capt. Bagge in the chair.

A great number of petitions for new sewers having been received, the court proceeded to receive tenders for covering over about 300 feet of the Ranelagh Sewer northward of Grosvenor-bridge, King's-road, Chelsea. A commissioner tendered a protest by letter against the proposed work, but the court decided on not receiving it. The following tenders for the performance of the work were then received:—

| | | |
|----------------------------|------|---|
| J. and S. Williams | £798 | 0 |
| Scimmon and Co. | 780 | 0 |
| Dethick | 743 | 0 |
| J. Yeoman | 728 | 0 |
| H. Perkins | 725 | 0 |
| Watts | 719 | 9 |
| Hutton | 705 | 0 |
| Humphreys and Thurst | 699 | 0 |
| W. Hill and Co. (accepted) | 690 | 0 |

Messrs. Newton and Felt, who had neglected to insert a door in the wall over the sewer, in an intended road by Lord's Cricket Ground, were also summoned, but did not appear, and an order was given to the officers to prostrate and destroy all obstruction over the sewer.

The Surveyor's Department.—Alderman Johnson said, in moving the resolution of which he had given notice, he should abstain from any observation, as he had no wish then to go into a discussion upon the subject. His resolution was, "That a committee be appointed to inquire into the surveyor's department, with a view to consider and report to the court whether the public exigencies require the affording additional assistance to the surveyor, and as to the best mode of making this department efficient with reference to the enlarged duties of the surveyor."

Mr. John White seconded the resolution, and in doing so alluded to the inconvenience that was constantly experienced, both by that court and the surveyor, from the absence of any regular plan or sections of the principal sewers, from their source to their discharge. He trusted that a regular and defined plan of the main lines of sewers would be laid down, so that the fullest information might be obtained. With these remarks he had great pleasure in seconding the resolution.

Mr. Le Breton wished the matter to be referred to a special court, and hoped that its consideration would not be left to a committee, as he thought it was opposed to the practice of this court to act by committee at all. He was in favour of open doors to the most important proceedings, and the business of detail by an open special court would prove more satisfactory, both to themselves and the public, and by the result thus arrived at they might give additional power and force to the surveyor's department.

Mr. T. L. Donaldson was decidedly in favour of the matter being referred to a select committee, and considered that it was the every-day practice, even in the House of Commons, to refer matters in the first instance to a select committee. They all knew the evil and the delay of business when a court was too numerous, and that decisions were frequently come to upon the impression of some striking fact, which afterwards, upon a calm consideration, was not found to be so satisfactory, as it had previously appeared. Besides, their deliberations would not be closed to the commissioners, any of whom that pleased would be at liberty to attend.

Mr. Hawkes looked upon the chief evil to arise from having but one surveyor, and thought they should divide the duties, especially as they were told by the surveyor that he was frequently unable to go to rest before four o'clock in the morning, in consequence of the heaviness of his duties. He had another objection to their proceeding in the matter, when it was known that they were an expiring commission, and had scarcely two months to live, as it was pretty well understood that the commission would not be renewed, and it would be for the public benefit that it should not be renewed. Indeed, he had heard that one gentleman of the commission was preparing the specifications of a patent for a new court, to form an entirely new one on a much better plan, and composed of better materials than the old one. As to their death-bed repentances, he had not much opinion of them, and he thought it was much better for them at once to wind up their affairs, so that they might be able to retire from the scene with something like decency.

Mr. Alderman Johnson said he should not be deterred by the ridicule with which the honourable commissioner had thought fit to receive his motion,